

NEOTROPICAL TINEIDAE, I: THE TYPES OF H. B. MÖSCHLER  
(LEPIDOPTERA: TINEOIDEA)

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*Abstract.*—The types of four little-known moth species described by H. B. Möschler in the family Tineidae are critically examined and illustrated. Three (*pallidus*, *ochraceus*, and *walsinghami*) are members of the large American genus *Acrolophus*; the fourth (*Pexicnemidia mirella*) has been transferred to the former yponomeutoid genus *Urodus*. *Acrolophus walsinghami* is synonymized under *A. triatomellus* (Walsingham) (new synonymy).

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This contribution initiates a series of reports designed to investigate and reveal a major faunal component of the Neotropical Region. The series will consist of faunal studies, generic revisions, biological observations, and reports (such as the present one) on poorly known tineid taxa described by previous workers. Ultimately the series will comprise a major treatise on the neotropical Tineidae.

Currently, 84 genera and 455 species of Tineidae are recognized (Davis, 1984) from the Neotropical Region, including all of South America and Mexico as well as marginal records from the extreme southern United States. Since 1963, the author has led eight separate collecting trips to the neotropics, with several more planned. In recent years I have also supported through Smithsonian Institution grants several colleagues who have assisted me in a much needed survey of the Neotropical Region. Results from these initial efforts suggest at least 75% of the West Indian and Central American and from 85 to 90% of the South American tineid faunas are unnamed. These minimal estimates indicate a total fauna for the Neotropical Region of about 2400 species, most of which are yet to be collected.

Although several species of Tineidae are serious economic pests of both animal and plant products, the vast majority of neotropical species are ground level detritus feeders. They, along with innumerable other soil organisms, thus serve a vital function in the recycling of organic matter and in the basic production of soils in the fragile tropical ecosystem.

Institutional acronyms referred to in this paper are: BMNH for British Museum (Natural History), London, England; MGAB, Muzeul de Istorie naturala "Grigore Antipa," Bucharest, Romania; NHMV, Naturhistorischen Museum, Vienna, Austria; USNM, National Museum of Natural History (formerly United States National Museum), Smithsonian Institution, Washington, D.C., USA; ZMHB, Zoologischer Museum, Humboldt Universität, Berlin, Germany (DDR).

NEOTROPICAL TINEIDAE TREATED BY H. B. MÖSCHLER

The German lepidopterist H. B. Möschler wrote three major faunal works on neotropical Lepidoptera. Two of these, treating Surinam (1876-1882) and Puerto

Rico (1890), contained descriptions of Tineidae. Of the seven new species originally included in the Anaphoridae, Tineidae or "Tinaceae" by Möschler, only four remained in the family until recently. Three of these are members of the large neotropical genus *Acrolophus*, and one, *Pexicnemidia mirella* Möschler, was found by the author to be a species of *Urodus* and was so treated in the recent Neotropical Checklist (Heppner, 1984). Möschler also mentioned several other "tineoid" names, most of which have been correctly assigned to other families. However, three names (*Acrolophus plumifrontella* (Clemens), *Anaphora popeanella* (Clemens) and *Myrmecozela ochraceella* Tengstrom) have persisted in the Latin American literature down to the present. Because none of the three are believed to occur in Latin America but are probably misidentifications, they were omitted from the recent Neotropical Checklist. All were determined by Möschler from specimens collected in Puerto Rico. Although Möschler's tineid types are preserved in the collections of Humboldt University (ZMHB) and were examined in the course of this study, specimens from Puerto Rico identified by Möschler under the preceding three names could not be located. Both *Acrolophus plumifrontella* and *A. popeanella* are common North American insects for which I know of no authentic examples from the West Indies. The only North American *Acrolophus* which I have verified from the Antilles is *A. arcanella* (Clemens). Several specimens of this species from Cuba exist in the USNM and Forbes (1931) mentions its occurrence in Puerto Rico. Möschler's "*A. plumifrontella*" could refer to the very similar and closely related *A. mimasalis* (Walker) described from the Dominican Republic and tentatively reported from Puerto Rico by Forbes (1930). His *A. popeanellus* may have represented an undescribed species. The European *Myrmecozela ochraceella* Tengstrom likewise presents a problem in lieu of actual Puerto Rican specimens. Possibly it represented a pale example of *Xystrologa antipathetica* (Forbes), a common myrmecozeline from Puerto Rico.

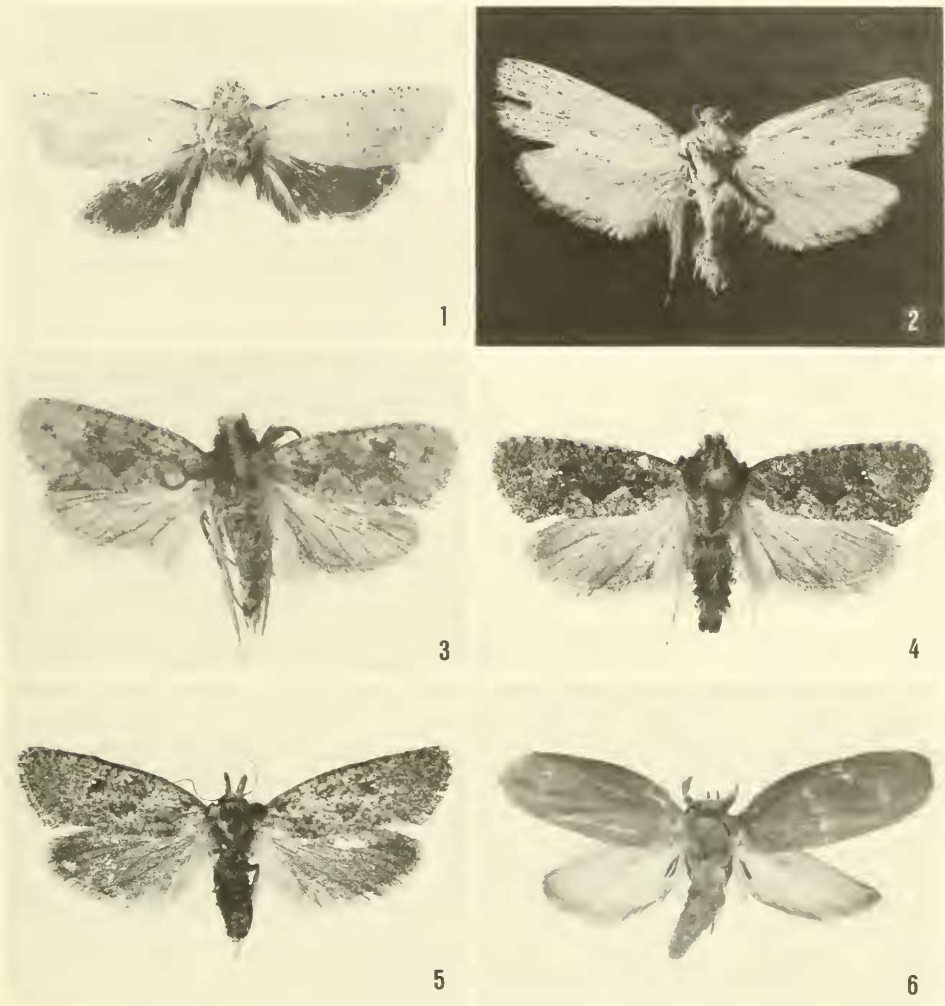
One other matter which needs to be mentioned concerns the family name for the large American genus *Acrolophus*. In his Puerto Rican paper, Möschler (1890) included *Acrolophus* and its allies in the family Anaphoridae, thus raising the status of the group name first proposed by Walsingham (1887) as a subfamily within Tineidae. Probably because Meyrick synonymized *Anaphora* (along with 15 other names) under *Acrolophus*, Walsingham (1914), not wishing to base a familial name on a junior synonym, later renamed the family Acrolophidae. Although Anaphorinae (and Anaphoridae) clearly has priority and is available, the familial name Acrolophidae, or Acrolophinae, has been used consistently to the present day—a usage that I hope will be conserved.

#### *Acrolophus pallidus* Möschler

Figs. 1, 7–10

*Acrolophus pallidus* Möschler, 1881: 438.—Walsingham, 1887: 153; 1914: 383.—Dalla Torre and Strand, 1929: 25.—Davis, 1984: 20.

The unique female holotype, missing the abdomen and deposited in ZMHB, has been examined and compared to conspecific specimens in the USNM. *Acrolophus pallidus* is most closely allied to *A. vigia* Beutelspacher, reared from orchid roots in Mexico, and an undescribed species from Colombia in the USNM also reared from orchid roots. All three species are similar in possessing light



Figs. 1-6. Adults. 1, *Acrolophus pallidus*, holotype ♂, Surinam, length of forewing 14.5 mm. 2, *A. ochraceus*, holotype ♂, Puerto Rico, length of forewing 11.5 mm. 3, *A. triatomellus*, lectotype ♂ of *A. walsinghami*, Puerto Rico, length of forewing 7 mm. 4, *A. triatomellus*, syntype ♂, St. Thomas, length of forewing 4.2 mm. 5, *A. triatomellus*, syntype ♀, St. Thomas, length of forewing 10 mm. 6, *Urodus mirella*, lectotype ♂, Puerto Rico, length of forewing 7.2 mm.

brown, more or less speckled forewings and dark fuscous hindwings in both sexes. The female labial palpi of *A. pallidus* are very short, with those of the male more than twice as long and terminating at the vertex well short of the occiput.

Walsingham (1914) reported *A. pallidus* from Costa Rica; upon examination, this specimen (USNM) proved to be *A. vigia* and represents a southward extension of the latter's range. Consequently, the distribution of *A. pallidus* is still restricted to the Guiana coastal plain. The male genitalia figured is from a specimen collected at St. Jean, French Guiana which was also mentioned by Walsingham (1914). The female of this species is unknown.

*Additional material examined:* French Guiana: St. Jean, Maroni: 1 ♂, Schaus Collection (USNM). St. Laurent du Maroni: 2 ♂, Dognin Collection (USNM).

***Acrolophus ochraceus* (Möschler)**

Figs. 2, 15–19, 22

? *Caenogenes ochracea* Möschler, 1890:337.—Walsingham, 1891: 514; 1897: 170.  
*Acrolophus ochracea* (Möschler).—Wolcott, 1923: 207; 1936: 504.—Davis 1894: 20.

*Acrolophus (Caenogenes) ochraceus* (Möschler).—Forbes, 1930: 162.—Wolcott, 1951: 743.

*Acrolophus ochraceus* was described from a single male, labelled simply 'Portorico,' and now deposited in the collections of ZMHB. Möschler originally placed *A. ochraceus* in Walsingham's genus *Caenogenes*, which was later synonymized by Meyrick (1912: 191) along with 15 other names under *Acrolophus*. Forbes (1930) maintained *Caenogenes* as a subgenus of *Acrolophus*.

Even in a genus as large and diverse as *Acrolophus*, this species stands out. Its generally pale yellowish brown color and relatively straight forewing termen contrasts sharply with most other acrolophine species. The labial palpi of the male are extremely elongate, extending over the head between the antennae to the posterior margin of the mesonotum. The female differs in having labial palpi only slightly upturned and of normal length (less than one third the length of the male). The dorsal vestiture of the female hindwings is also much darker (light fuscous) instead of tawny. The male genitalia are unusual in demonstrating considerable asymmetry in a genus largely devoid of such variation. The female genitalia was illustrated from the specimen listed below from Rio Piedras.

*Additional material examined:* PUERTO RICO: 7 km. S. Ciales, 3200' [976 m]: 1 ♂, 22 July.–22 Aug. (USNM). Laguna Guajataca, Boy Scout Camp, 205 m: 1 ♂, 2–5 Apr. (USNM). Maricao State Forest: 1 ♂, 22 June (USNM). Palmas Abajas (near Guayama), 1900' [579 m]: 1 ♂, 16 Aug. (USNM). Reserva Forestal Guajataca, 360 m: 1 ♂, 18–28 Mar. (USNM). Rio Piedras, Insect Experiment Station: 1 ♀, 13 Apr. (USNM). San Juan: 1 ♂, 15 Sept. (USNM).

Forbes (1930) and Wolcott (1936) list additional collecting localities.

***Acrolophus triatomellus* (Walsingham)**

Figs. 3–5, 11–14, 23

*Anaphora triatomella* Walsingham, 1897: 172.—Strand, 1929: 22.

*Acrolophus triatomellus* (Walsingham).—Forbes, 1930: 163; 1931.—Wolcott, 1936: 504; 1951: 743.

*Acrolophus triatomella* (Walsingham).—Davis, 1984: 20.

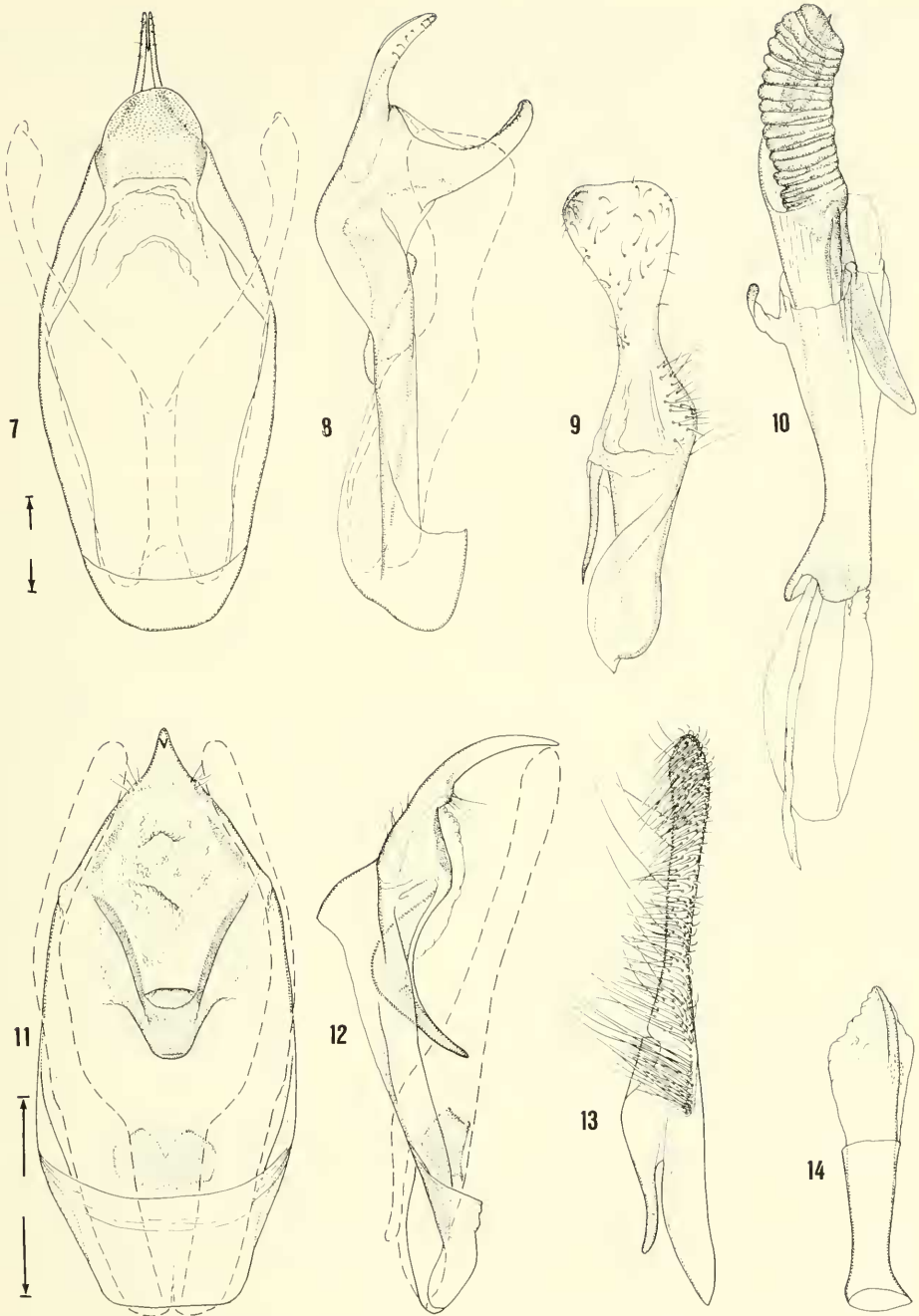
*Acrolophus walsinghami* Möschler, 1890: 336 (New synonymy).—Walsingham, 1891:514; 1897:174.—Wolcott, 1923: 207.—Strand, 1929: 26.—Forbes, 1930: 165.—Wolcott, 1936: 504; 1951: 744.—Davis, 1984: 20.

*Acrolophus triformellus* Forbes, 1930: 163; 1931: 391.—Wolcott, 1936: 504; 1951: 743.—Davis, 1984: 20 (synonym of *walsinghami*).

*Acrolophus triformalis* [sic] Forbes, 1930: 160 (misspelling of *triformellus*).—Davis, 1984: 20.

*Acrolophus walsinghami* Möschler was described from three male syntypes from





Figs. 7-14. Male genitalia. 7, *Acrolophus pallidus*, ventral view. 8, Lateral view. 9, Lateral view of valva. 10, Aedoeagus. 11, *A. triatomellus*, ventral view. 12, Lateral view. 13, Lateral view of valva. 14, Aedoeagus. All scales = 0.5 mm.

Puerto Rico. One of these, bearing a locality label 'Portorico,' a genitalia slide label no. 3454, as well as a lectotype label (by D. Davis), has been selected as lectotype. The synonymy of this name and that of *A. triformellus* Forbes has already been noted in the Neotropical Checklist (Davis, 1984).

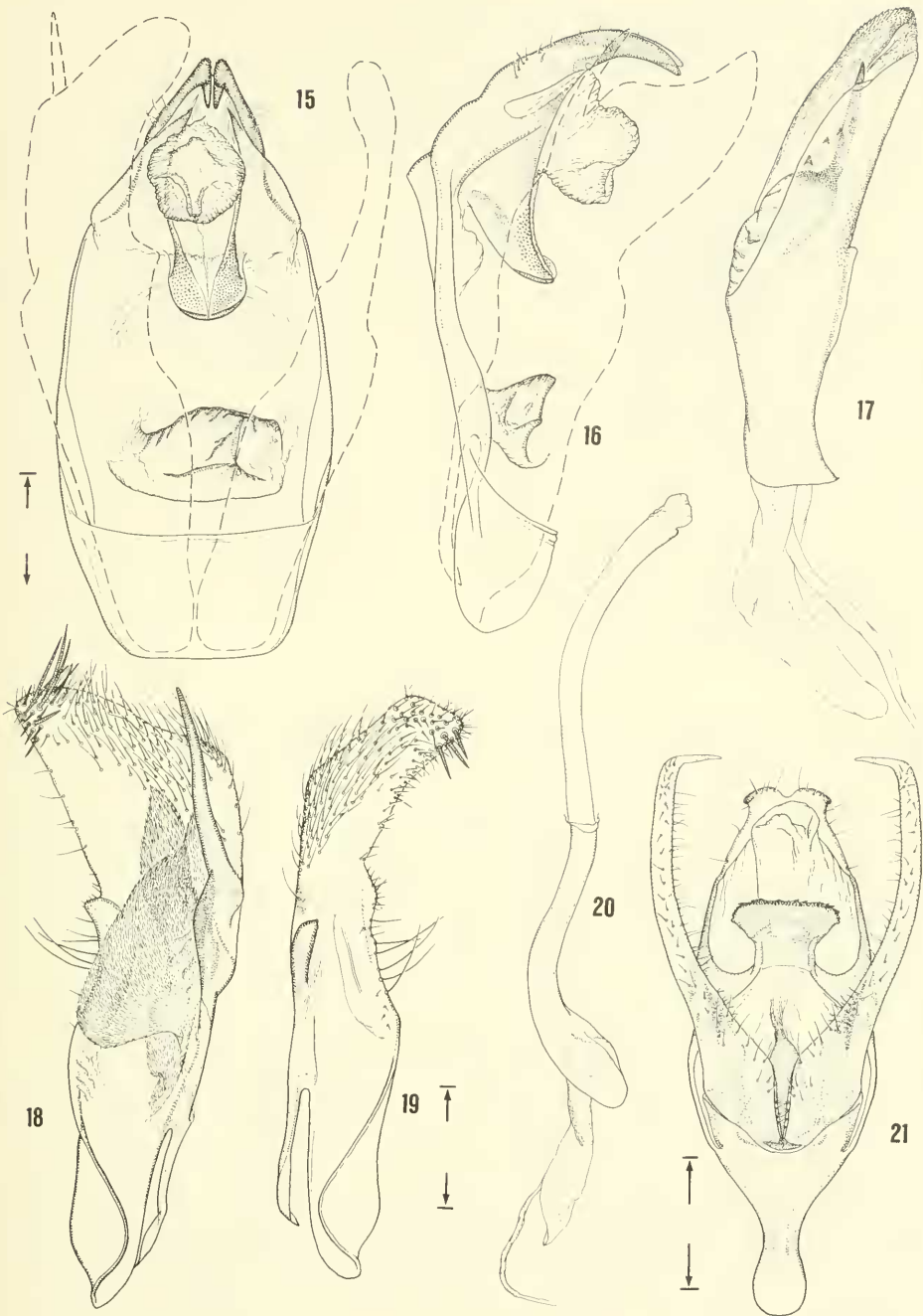
Comparison of the male lectotype of *Acrolophus walsinghami* with the type series of *A. triatomellus* indicates these two species also to be synonymous. Walsingham described *A. triatomellus* from five specimens collected on St. Thomas. As was customarily done by Walsingham, no actual holotype was selected; instead, a "type" ♂ and ♀ (now deposited in MGAB) were selected along with three "paratypes." The male "type" bearing the labels: "S. Thomas, 5.IV.94; *Anaphora triatomella* Wlsm., ♂ 1912, 109, Type; Holotype, *Anaphora triatomella* Wlsm., ♂, Romania; Lectotype ♂, *Anaphora triatomella* Wlsm., by Davis, is hereby designated as the lectotype. The remaining four specimens: 1 ♀ "allotype," 29.III.94, (MGAB); 1 ♂, 20.III.1894, (BMNH); 1 ♂, 10/4 94, (NMVM); 1 ♀, 23/3 94 (NMVM), are to be considered paralectotypes.

*Acrolophus triatomellus* appears to be one of the most common members of the genus occurring in Puerto Rico and the Virgin Islands. Its distribution is not known to extend beyond these islands. In the collections of the USNM are more than 100 specimens from Puerto Rico and nearly 50 specimens from Guana Island in the British Virgin Islands. The forewings of the male are quite variable from light brown with a well defined pattern to an overall dark fuscous color with almost no pattern discernible except for a pair of pale, whitish markings near the basal third of the cubital cell. The female is generally paler in color, often with indistinct forewing markings. The labial palpi of the male are recurved over the head and extend to the first abdominal segment. Those of the female are less than one third the length of the male palpi and are porrect with a slight dorsal arch.

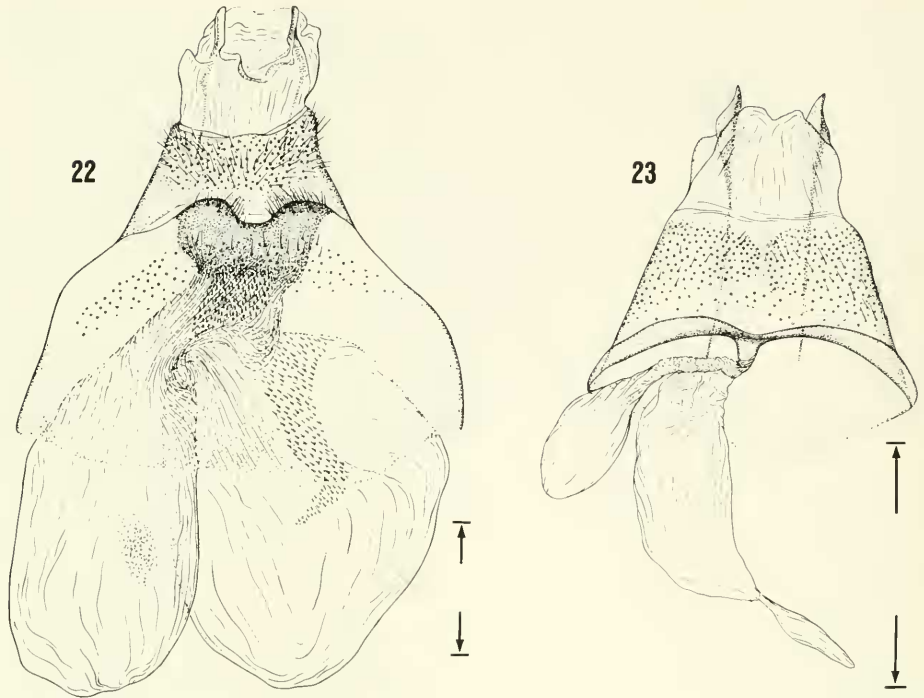
This species can be easily confused with the closely related *A. parvus* Walsingham. The male genitalia of the latter possess broader, less attenuated valvae. *Acrolophus parvus* is known to range from Dominica (its type locality) into the Virgin Islands where it overlaps with *A. triatomellus*. The former is not known to occur in Puerto Rico, although it may range as far west as St. Thomas (Forbes, 1930).

The illustrations of the male genitalia are that of the lectotype of *A. walsinghami*. The female genitalia is figured from a paratype of *A. triatomellus*.

*Additional material examined:* PUERTO RICO: Balneario de Jobos: 2 ♂, 16 Mar.—8 Apr. Bayamon: 9 ♂, 3 ♀, 15 Jan.—28 July. Coamo Springs: 2 ♂, 10 Apr. Guajataca Forest, Isabela: 1 ♂, 1 ♀, 22 July. Guánica Insular Forest: 1 ♂, 6 July. Isabela, Hotel Palmeriana, 60 m: 2 ♂, 1 ♀, 10–14 Mar. Isla Maguay, Parguera: 1 ♂, 18 Dec. Juquillo, 3 m: 1 ♂ 18–19 Jan. Lago Tortuguero: 1 ♂, 2 Aug. Laguna Guajataca, Boy Scout Camp, 205 m: 3 ♂, 2–5 Apr. Lajas: 1 ♂, 6 July. La Parguera, 3 m: 33 ♂, 1 ♀, 5–11 Feb. Las Marias: 1 ♂, 22 July. Luquillo Experimental Forest, Verde Field Station, 435 m: 1 ♀, 1–21 Jan. Mayaguez: 4 ♂, Jan; 4 ♂, 2 ♀, 1 July–31 Aug. Monte del Estado, near Maricao, Centro Vacacional, 650 m: 1 ♀, 1–9 Mar. Punta Jacinto, SW coast near Guánica, 3 m: 3 ♂, 27–28 Jan. 12.2 km S. Rincon, Route 115, 3 m: 2 ♂, 1 ♀, 22–28 Feb. Salinas: 1 ♂, 1 ♀, 5 Aug. San Germán: 1 ♂, 16 Apr. San Juan: 1 ♀, 15 Sept. Vieques Island, Puerto Real: 1 ♂, 29 Apr. VIRGIN ISLANDS: Guana Island: 43 ♂, 4 ♀, 1–14 July. All specimens deposited in the USNM.



Figs. 15-21. Male genitalia. 15, *Acrolophus ochraceus*, ventral view. 16, Lateral view. 17, Aedeagus. 18, Lateral view of left valva. 19, Lateral view of right valva. 20, *Urodox mirella*, aedeagus. 21, Ventral view. All scales = 0.5 mm.



Figs. 22, 23. Female genitalia. 22, *Acrolophus ochraceus*, ventral view. 23, *A. triatomellus*, ventral view. All scales = 0.5 mm.

***Urodus mirella* (Möschler)**

Figs. 6, 20–21

*Pexicnemidia mirella* Möschler, 1890: 338.—Walsingham, 1892: 518; 1897: 167.—

Forbes, 1930: 159.—Wolcott, 1951: 743.

*Urodus mirella* (Möschler).—Davis, in Heppner, 1984: 55.

Although no longer considered a member of Tineidae, some discussion of this taxon is required. Forbes (1930) first questioned the family placement of *Pexicnemidia*, suspecting it to be either a member of Psychidae or Yponomeutidae. Upon examining the holotype, the author immediately recognized the genus as a junior synonym of the rather large neotropical genus *Urodus* Herrich-Schäffer. In the recent Neotropical Checklist, Heppner (1984) provisionally places *Urodus* in the Yponomeutidae, where it has been relegated by most authors in this century. Kyrki (1984) removed *Urodus* from the Yponomeutoidea on the basis of several features of the adult and immatures, principal among which was the presence of a tortricoid abdominal articulation. Currently the genus is in limbo, unassigned to any superfamily.

Möschler described *P. mirella* from two males, both collected from undesignated locals in Puerto Rico. One of the specimens, bearing a lectotype label (by D. Davis) and a ♂ genitalia slide label (D. R. Davis, no. 3456), is hereby designated lectotype.

*Urodus mirella* is almost certainly a junior synonym of *U. sordidata* (Zeller, 1877). Because the present deposition of the unique male holotype of the latter



is unknown, their synonymy cannot be verified. Searches for the missing holotype in the collections of the BM(NH), NHMV, TMB, and ZMHB have been futile. *Urodus sordidata* is approximately the same size and color of *U. mirella* and, similarly, was described from Puerto Rico. Among its diagnostic features, Zeller mentions the prominent black hairpencil present at the base of 1A on the dorsum of the male hindwings. This hairpencil is also present of the lectotype of *U. mirella* (see Fig. 6).

In addition to the Puerto Rican material examined, I have also collected this species from the Dominican Republic, where I found both *mirella* and a closely allied species at various sites but mostly around the Central Cordillera. The second species, with distinctly different male genitalia and darker hindwings than *U. mirella*, is identical to USNM material from Cuba which is believed to represent *U. ovata* (Zeller).

*Additional material examined:* DOMINICAN REPUBLIC: Dajabon Prov: 13 km S Loma de Cabrera, ca 400 m: 1 ♂, 20–22 May. El Seibo Prov: 15 km S Milches, ca. 500 m: 1 ♂, 1 ♀, 31 May. La Estrellata Prov: 4 km SE Rio Limpio, ca. 760 m: 1 ♀, 24–25 May. La Vega Prov: Constanza, Hotel Nueva Suiza, 1164 m: 1 ♀, 29 May. 10 km NE Jarabacoa, Hotel Montaña, ca. 520 m: 3 ♂, 1 ♀, 28 May. La Palma, 12 km E El Rio: 2–13 June. PUERTO RICO: Cialitos Cruces, 7 km S Ciales, 3200 ft (976 m): 1 ♂, 1 ♀, 2 Feb.–12 Mar. Maricao State Forest: 2 ♂, 29 July. San German: 1 ♂, 12–22 Feb. All specimens deposited in USNM.

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